

### Abstract of the Disclosure

Provided is a DNA chip having a multi-layer structure of thin films. The DNA chip comprises: a substrate; a high reflection region, having a higher refractive index than that of the substrate and including a thin film having a relatively low refractive index and a thin film having a relatively high refractive index sequentially stacked on a predetermined region of the substrate; a low reflection region, having a lower reflectance than that of the substrate and including a thin film having a relatively low refractive index stacked around the high reflection region on the substrate; a DNA probe fixed at least on the high reflection region. A hybridization reaction between the DNA probe and a target DNA labeled with a fluorescent dye occurs on the high reflection region.